THE EFFECT OF A NOVEL AGENT, AFPEP ON PROLIFERATION OF HUMAN GLIOBLASTOMA CELLS

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**Introduction**

The novel anti-cancer peptide, AFPeP, an Alpha-fetoprotein (AFP) analog, has shown promising inhibitory effect against Glioblastoma multiforme (GBM) cells in culture. AFPeP is a derivative of Alpha-fetoprotein. An epidemiology study has shown that pregnancy reduces the risk of developing GBM, and AFP has been implicated with this function. Here, we present a data showing that AFPeP interferes with proliferation of GBM cells in culture. These results were compared with current treatment agents used in clinical practice.

**Methods**

Mice glioblastoma cell lines was cultured as a monolayer in F-12K Medium with 2.5% fetal bovine serum, 1% penicillin and streptomycin in a humidified 5% CO₂ atmosphere at 37°C. Cells were released from monolayer by trypsinization using 0.25% trypsin. To examine the effect of AFPeP, tamoxifen and temolozomide, 5 x 10³ cells were seeded in each well of 2 collagen-coated 96-well plates. After 24hrs, the medium was replenished with various concentrations, (1µM, 10µM, and 100µM) of the AFPeP, tamoxifen, and temolozomide. Every 24hrs, for the next 2 days, the medium was removed and 2 µL of MTT solution (5 mg/ml in PBS) was added to each well, of one of the 96-well-plates. Subsequently, the medium was discarded and 100 µL of DMSO was added to each well. The plate was incubated in 5% CO₂ for 10 min. The growth inhibition was determined by measuring the absorbance at 540 nm and on an automated multi-wells reader.

**Results**

After 24hrs of treatment the growth inhibition was 26% for AFPeP, 15% for tamoxifen, and 4% for temolozomide. After 48hrs of treatment the growth inhibition was: 88% for tamoxifen, 36% for temolozomide and 29% for AFPeP.

**Conclusion**

• AFPeP had more growth inhibition than tamoxifen and temolozomide after 24 hours of treatment, and was the least effective after 48hrs of treatment.

**Future Directions**

Further studies are underway to investigate and optimize the effect of AFPeP in GBM.